



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: Trent XWB-84      BYPASS RATIO: 9.0  
 UNIQUE ID NUMBER: 14RR075      PRESSURE RATIO ( $\pi_{00}$ ): 41.1  
 COMBUSTOR: Phase5 Tiled  
 ENGINE TYPE: TF      RATED THRUST ( $F_{00}$ ) (kN): 379.0

REGULATORY DATA      **\*\* DATA SUPERSEDED \*\***      SEE FOLLOWING UID FOR REVISED DATA:      **18RR079**

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	1.5	29.3	58.7	11.6
AS % OF ORIGINAL LIMIT	7.4	24.9	48.1	70.9
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			60.1	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			65.9	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			72.4	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			81.2	

DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 - OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	2.819	0.00	0.39	45.48	5.8
CLIMB OUT	85	2.2	2.306	0.00	0.39	34.53	6.4
APPROACH	30	4.0	0.801	0.00	1.20	11.46	6.6
IDLE	7	26.0	0.291	0.94	20.66	4.73	1.2
LTO TOTAL FUEL (kg) or EMISSIONS (g)			1069	424	9760	20243	-
NUMBER OF ENGINES				2	2	2	2
NUMBER OF TESTS				4	4	4	4
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				1.1	25.8	53.4	9.9
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				0.0	2.3	0.3	3.0
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				1.11-1.13	24.1-27.4	53.18-53.64	7.8-12.1

ACCESSORY LOADS

POWER EXTRACTION      0      (kW)      AT      -      POWER SETTINGS  
 STAGE BLEED      0      (% CORE FLOW)      AT      -      POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.5-101.3
TEMPERATURE (K)	280-295
ABS HUMIDITY (kg/kg)	0.00248-0.00964

FUEL

SPEC	
H/C	1.86
AROM (%)	17.3

MANUFACTURER: Rolls-Royce plc  
 TEST ORGANIZATION: Rolls-Royce  
 TEST LOCATION: Derby  
 TEST DATES: 01/04/2012-03/07/2014

NO<sub>x</sub> REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

REMARKS

1. Data from Certification Report DNS197360 Iss 2
2. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
3. NO<sub>x</sub> levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

Compliance with Fuel Venting requirements:      -      ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)